WHAT IS CLAIMED IS:

1. A compound having a structure selected from:

$X—R—A—Q—(Y)_n$, $R—X—A—(Y)_n—Q$, $R—X—A—Q—(Y)_n$, and $X—R—A—(Y)_n—Q$

wherein,

A is a nucleic acid chain comprising nucleic acid monomers selected from the group consisting of natural nucleic acids, modified nucleic acids and combinations thereof;

R is a molecular energy transfer donor;

Q is a molecular energy acceptor; and

X and Y are the same or different and are non-nucleic acid stabilizing moieties that interact to bring R and Q into operative proximity, thereby enabling transfer of energy from R to Q; and

n is 0 or 1.

2. The compound according to claim **1**, wherein said molecular energy donor is a fluorophore.

3. The compound according to claim **1**, wherein said molecular energy acceptor is a fluorescence quencher.

4. The compound according to claim **1**, wherein X and Y are both hydrophobic moieties.

5. The compound according to claim **4**, wherein X and Y are members independently selected from the group consisting of saturated hydrocarbons, unsaturated hydrocarbons, steroids, fatty acids, fatty alcohols and hydrophobic peptides.

6. The compound according to claim **1**, wherein natural nucleic acids are members selected from the group consisting of deoxyribonucleotides, ribonucleotides and combinations thereof.

7. The compound according to claim **6**, wherein said modified nucleic acids are peptide nucleic acids.

8. The compound according to claim **1**, wherein said nucleic acid monomers are joined by linkages that are members independently selected from the group consisting phosphodiesters and modified phosphodiesters.

9. The compound according to claim **8**, wherein said modified phosphodiesters are members selected from the group consisting of phosphorothioates and phosphoramidates.

10. The compound according to claim **1**, wherein said nucleic acid sequence further comprises a hybridization enhancing moiety.

11. The compound according to claim **10**, wherein said hybridization enhancing moiety is a member selected from the group consisting of intercalating agents, minor groove binders and modified exocyclic bases.

12. The compound according to claim **1** wherein X and Y are independently attached to members selected from the group consisting of a natural base of said nucleic acid chain, a modified base of said nucleic acid chain, a 3'-hydroxyl group of said nucleic acid chain, a 5'-hydroxyl group of said nucleic acid chain, a 2'-hydroxyl group of said nucleic acid chain, and a linkage joining nucleic acid groups in said nucleic acid chain.

13. The compound according to claim **1**, wherein said compound is immobilized on a solid surface.

14. A method for amplifying DNA, wherein a compound according to claim **1** is a primer in said method.

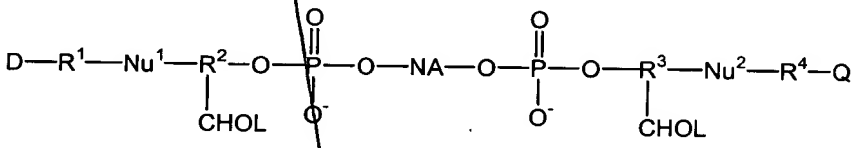
15. The method according to claim **14**, wherein said method comprises a member selected from the group consisting of polymerase chain reaction (PCR), nucleic acid sequence based amplification (NASBA), strand displacement amplification (SDA) and combinations thereof.

16. A method for analyzing or quantitating DNA, wherein the compound according to claim **1** is used as a probe.

17. The method according to claim **16**, wherein said method comprises a member selected from the group consisting of 5'-nuclease assay, rolling circle amplification and combinations thereof.

18. A kit for quantitating nucleic acid, said kit comprising a compound according to claim **1**.

19. A compound having the formula:



wherein,

CHOL is a cholesterol derivative;

R^1, R^2, R^3 and R^4 are linker moieties independently selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalky;

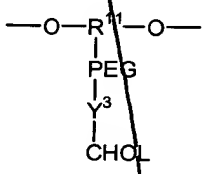
Nu^1 and Nu^2 are independently selected nucleotide residues;

NA is a nucleic acid sequence;

D is a donor of light energy; and

Q is a quencher of light energy.

20. The compound according to claim **19**, wherein R^1 and R^2 are independently selected and have structures according to the formula:



wherein,

R^{11} is a member selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

PEG is polyethylene glycol;

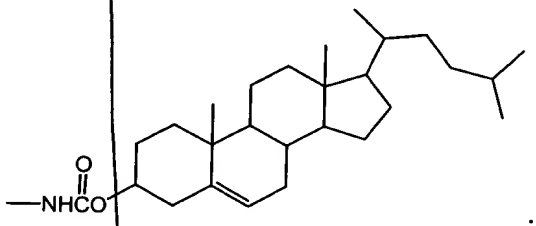
Y^3 is an organic functional group adjoining said PEG to said CHOL.

21. The compound according to claim **20**, wherein said PEG has from about 2 to about 20 ethylene glycol subunits.

22. The compound according to claim **20** in which R^{11} is substituted or unsubstituted alkyl.

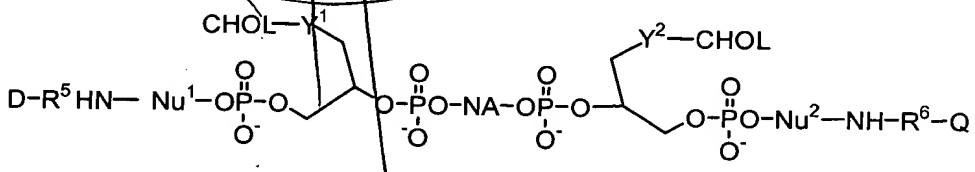
23. The compound according to claim **22**, wherein R^{11} is C_1-C_6 substituted or unsubstituted alkyl.

24. The compound according to claim **20**, wherein Y^3-CHOL has the structure:



25. The compound according to claim **19**, wherein Nu^1 and Nu^2 are nucleotides having an exocyclic amine group to which $-R^1$-D and $-R^4Q$ are attached, respectively.

26. A compound having the structure:



wherein,

NA is a nucleic acid sequence;

Nu^1 and Nu^2 are independently selected nucleotide residues;

Y^1 and Y^2 are linking groups independently selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

R^5 and R^6 are linking groups independently selected from the group consisting of substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl;

D is a donor of light energy; and

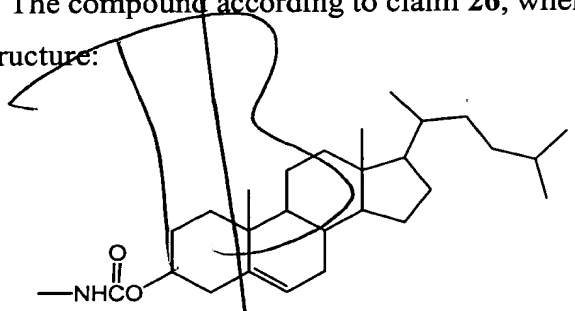
Q is a quencher of light energy.

27. The compound according to claim **26**, wherein Y^1 and Y^2 are members independently selected from substituted or unsubstituted alkyl and substituted or unsubstituted heteroalkyl.

28. The compound according to claim **27**, wherein Y^1 and Y^2 are polyethylene glycol.

29. The compound according to claim **28**, wherein said PEG has from about 2 to about 20 ethylene glycol subunits.

30. The compound according to claim **26**, wherein Y^1-CHOL and Y^2-CHOL have the structure:



31. The compound according to claim **19**, wherein Nu^1 and Nu^2 are nucleotides having an exocyclic amine group to which $-R^5$-D and $-R^6Q$ are attached, respectively.

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